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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/995,004 | 11/26/2001 | Stewart P. MacLeod | MS1-772US | 5434 |

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| EXAMINER |
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MIRZA, ADNAN M

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| ART UNIT | PAPER NUMBER |
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2145

DATE MAILED: 03/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/995,004

Applicant(s)

MACLEOD ET AL.

Examiner

Adnan M Mirza

Art Unit

2145

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-78 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-78 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-78 are rejected under 35 U.S.C. 102(e) as being unpatentable by Bowman-Amuah (U.S. 6,289,382).

As per claims Bowman-Amuah disclosed 1,19,37,55 in a distributed computing environment, a method for dynamically implementing workflow responsive to a directory object state change, the method comprising: detecting a state change to an object in a directory (col. 117, lines 40-46); and responsive to detecting the state change (col. 117, lines 2-11): mapping the state change to the object to a workflow comprising a set of tasks; and executing the tasks to achieve a desired state in the directory (col. 117, lines 24-37).

3. As per claims 2,20,38,56 Bowman-Amuah disclosed wherein executing the tasks further comprises storing the desired state (col. 101, lines 15-20).

Art Unit: 2145

4. As per claims 3,21,39,57 Bowman-Amuah disclosed wherein executing the tasks further comprises continuously executing an operation of a task of the tasks until convergence of the desired state is identified (col. 116, lines 47-63).

5. As per claims 4,22,40,58 Bowman-Amuah disclosed wherein executing the tasks further comprises storing a sequence of operations based on the tasks (col. 117, lines 13-21).

6. As per claims 5,23,41,59 Bowman-Amuah disclosed wherein executing the tasks further comprises storing information corresponding to one or more directory objects to which the workflow applies (col. 117, lines 13-12).

7. As per claims 6,24,42,60 Bowman-Amuah disclosed wherein executing the tasks further comprises storing status information based on respective status of at least one subset of the tasks (col. 101, lines 26-38).

8. As per claims 7,25,43,61 Bowman-Amuah disclosed wherein mapping the state change to the object further comprises evaluating the state change to the object based on a declarative condition stored as a text string on an object instance of a content class defined by the directory schema (col. 117, lines 40-47).

9. As per claims 8,26,44,62 Bowman-Amuah disclosed wherein a task of the tasks comprises any combination of a declarative condition or an operation that is stored as a text

Art Unit: 2145

string on an object instance of a content class defined by the directory schema (col. 115, lines 27-36).

10. As per claims 9,27,45,63 Bowman-Amuah disclosed wherein semantics of the workflow are based on a workflow schema (col. 117, lines 24-39).

11. As per claims 10,28,46,64 Bowman-Amuah disclosed wherein mapping the state change to is the object, semantics of the mapping are based on an event association object schema (col. 117, lines 4-10).

12. As per claims 11,29,47,65 Bowman-Amuah disclosed wherein executing the tasks at least one subset of the tasks are executed with respect to one another based on an order of execution relationship comprising a finish-start relationship, a parallel execution relationship, a precedence constraint relationship, or a task priority relationship (col. 118, lines 26-42).

13. As per claims 12,30,48,66 Bowman-Amuah disclosed wherein executing the tasks at least one subset of the tasks is executed with respect to one another based on a precedence constraint relationship or a task priority relationship (col. 118, lines 2-10).

14. As per claims 13,31,49,67 Bowman-Amuah disclosed wherein the method further comprises: monitoring a status corresponding to a task of the tasks; storing the status on a status

Art Unit: 2145

monitoring object; and wherein a content class in the directory schema defines the status monitoring object (col. 115, lines 48-54).

15. As per claims 14,32,50,68 Bowman-Amuah disclosed wherein the method further comprises: monitoring a set of directory resources affected by the workflow; storing the directory resources on a status monitoring object; and wherein a content class in the directory schema defines the status monitoring object (col. 101, lines 26-38).

16. As per claims 15,33,51,69 Bowman-Amuah disclosed wherein the method further comprises: monitoring a status corresponding to an operation of the workflow; determining that the status comprises a failure status; responsive to the determining, taking a corrective action to advance the workflow in view of the failure status; and wherein a content class in the directory schema defines the status monitoring object (col. 117, lines 24-38).

17. As per claims 16,34,52,70 Bowman-Amuah disclosed wherein executing the tasks further comprises: updating a status corresponding to a task in the workflow; and responsive to the updating, evaluating the workflow to determine that a next task of the tasks to be implemented (col. 115, lines 39-48).

18. As per claims 17,35,53,71 Bowman-Amuah disclosed wherein the tasks represent an inverse set of tasks that were previously performed as part of a different workflow (col. 116, lines 38-47).

Art Unit: 2145

19. As per claims 18,36,54,72 Bowman-Amuah disclosed wherein the tasks implement a policy with respect to one or more directory resources, and wherein mapping the state change to the object further comprises automatically determining the workflow based on the policy (col. 117, lines 1-12).

20. As per claim 73 Bowman-Amuah disclosed a workflow enabled directory schema comprising a plurality of base object content classes, the workflow enabled directory schema: a provisioning service content class to detect an event corresponding to a state change in a directory object (col. 117, lines 40-46); a workflow content class for storing a sequence of tasks; an event association content class for storing declarative conditions to map the state change to the directory object to an object instance of the workflow content class (col. 117, lines 1-13); and wherein the provisioning service content class is further configured to execute the sequence of tasks corresponding to the object instance (col. 116, lines 38-44).

21. As per claim 74 Bowman-Amuah disclosed wherein at least a subset of the base object content classes comprise a respective flexible attribute data field that indicates a data type, the data type being used to express various operational or data providing properties of the flexible attribute, the various operational or data providing properties being independent of the data type and independent of any modification to the workflow enabled directory schema (col. 115, lines 55-65).

Art Unit: 2145

22. As per claim 75 Bowman-Amuah disclosed wherein the sequence of tasks comprises any combination of a declarative conditions and operations corresponding to directory-based objects (col. 116, lines 53-63).

23. As per claim 76 Bowman-Amuah disclosed further comprising a status monitoring content class for storing a status of an object instance of the workflow content class (col.115, lines 27-36).

24. As per claims 77,78 Bowman-Amuah disclosed a computer-readable medium comprising a workflow enabled directory schema as recited (col. 117, lines 1-12).

Conclusion

25. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Adnan Mirza whose telephone number is (571)-272-3885.

26. The examiner can normally be reached on Monday to Friday during normal business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Valencia Martin Wallace can be reached on (571)-272-6159. The fax for this group is (703)-746-7239.

27. The fax phone numbers for the organization where this application or proceeding is assigned are as follows:

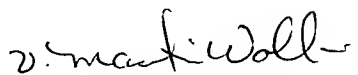
(703)-746-7239 (For Status Inquiries, Informal or Draft Communications, please label "PROPOSED" or "DRAFT");

(703)-746-7239 (For Official Communications Intended for entry, please mark "EXPEDITED PROCEDURE"),

(703)-746-7238 (For After Final Communications).

28. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is ~~(571)-272-3900~~⁸⁸⁵.

Any response to a final action should be mailed to:


VALENCIA MARTIN-WALLACE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700